

Mission Statement

To reduce the inappropriate* use of wrist-restraints for intubated surgical patients in TTSH SICU from 41% to 15% in 6 months time
Inclusion Criteria: Patient who is alert, able obey comments, not confused.

Exclusion Criteria:

- CAM ICU +ve
- RASS > +2 (Patients in Confused & Agitated State)
- Nasal intubation; Intubation grade >3

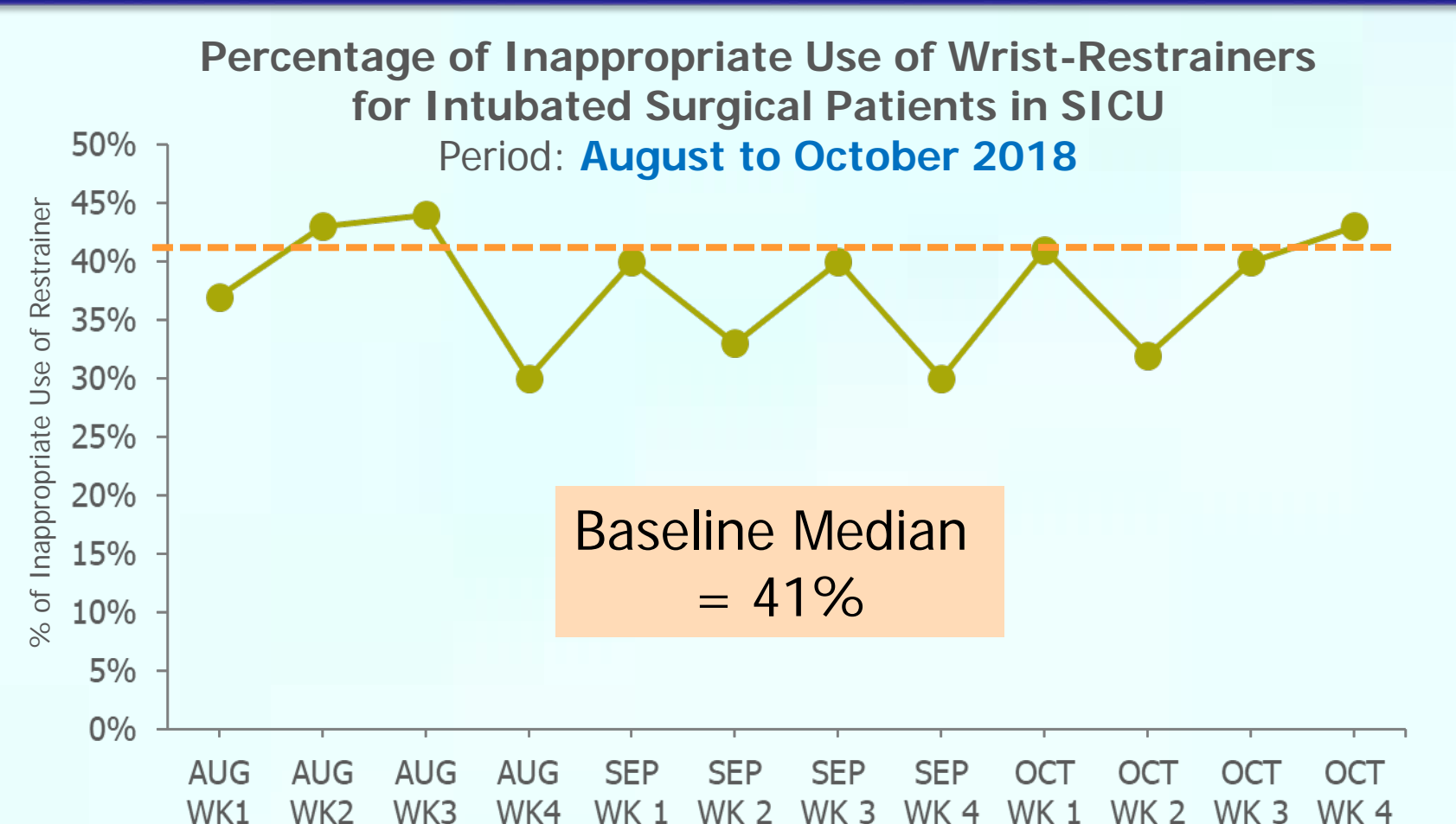
Team Members

	Name	Designation	Department
Team Leader	Yang Xuelian	Nurse Clinician	Previous: SICU Current: Ward 6D
Team Members	Wang Lin	Senior Staff Nurse	SICU
	Jessmine	Staff Nurse	SICU
	Rasidah	Staff Nurse	SICU
	Wilma	Staff Nurse	SICU
	Lee Pei Khim	Staff Nurse	SICU
	Jaclyn Chow	Physiotherapist	Physiotherapy
	Xu Min Ling	Senior Staff Nurse	SICU

Sponsors: Dr Nelson Chua & Ms Tay Meow Hoon

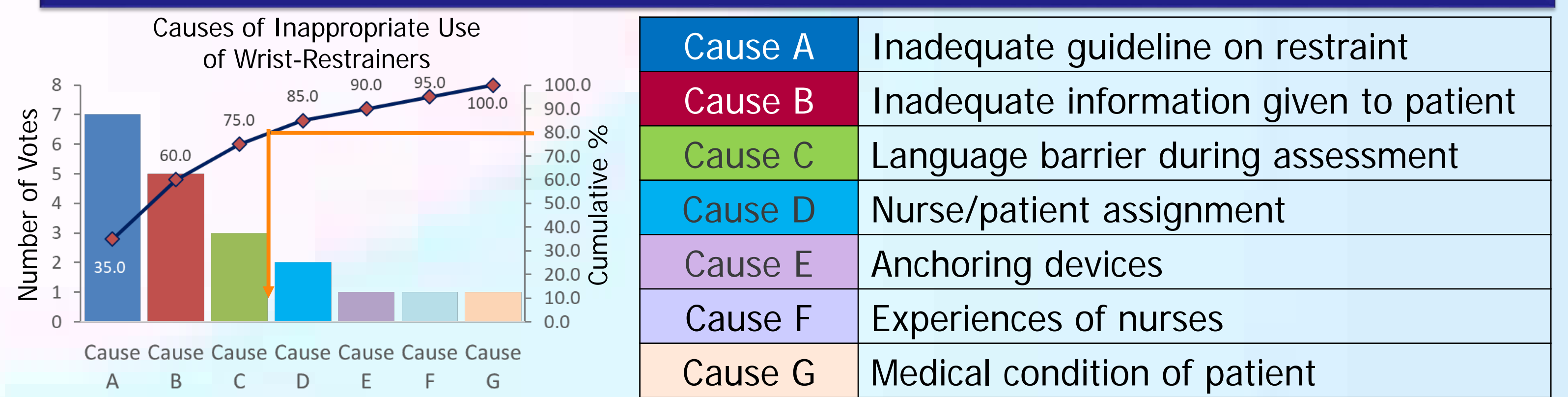
Evidence for a Problem Worth Solving

- In Africa, Langley, Schmolgruber & Egan (2011) reported in their qualitative study that 48.9% of the ICU patients were restrained.
- Kooi et al. (2015) in their study conducted in Netherlands also found out that 23% of the patients are restrained.
- Martin & Mathisen (2005) in their bicultural study discovered that restraints used in the United States is 39 out of 109 patients (36%), however **0 restrainter use in Norway.**



	AUG WK1	AUG WK2	AUG WK3	AUG WK4	SEP WK1	SEP WK2	SEP WK3	SEP WK4	OCT WK1	OCT WK2	OCT WK3	OCT WK4
Total Restraints Applied	33	43	40	27	40	30	36	25	41	32	36	39
Inappropriate Use of Restraints	12	18	17	8	16	10	14	7	17	10	14	17

Pareto Chart

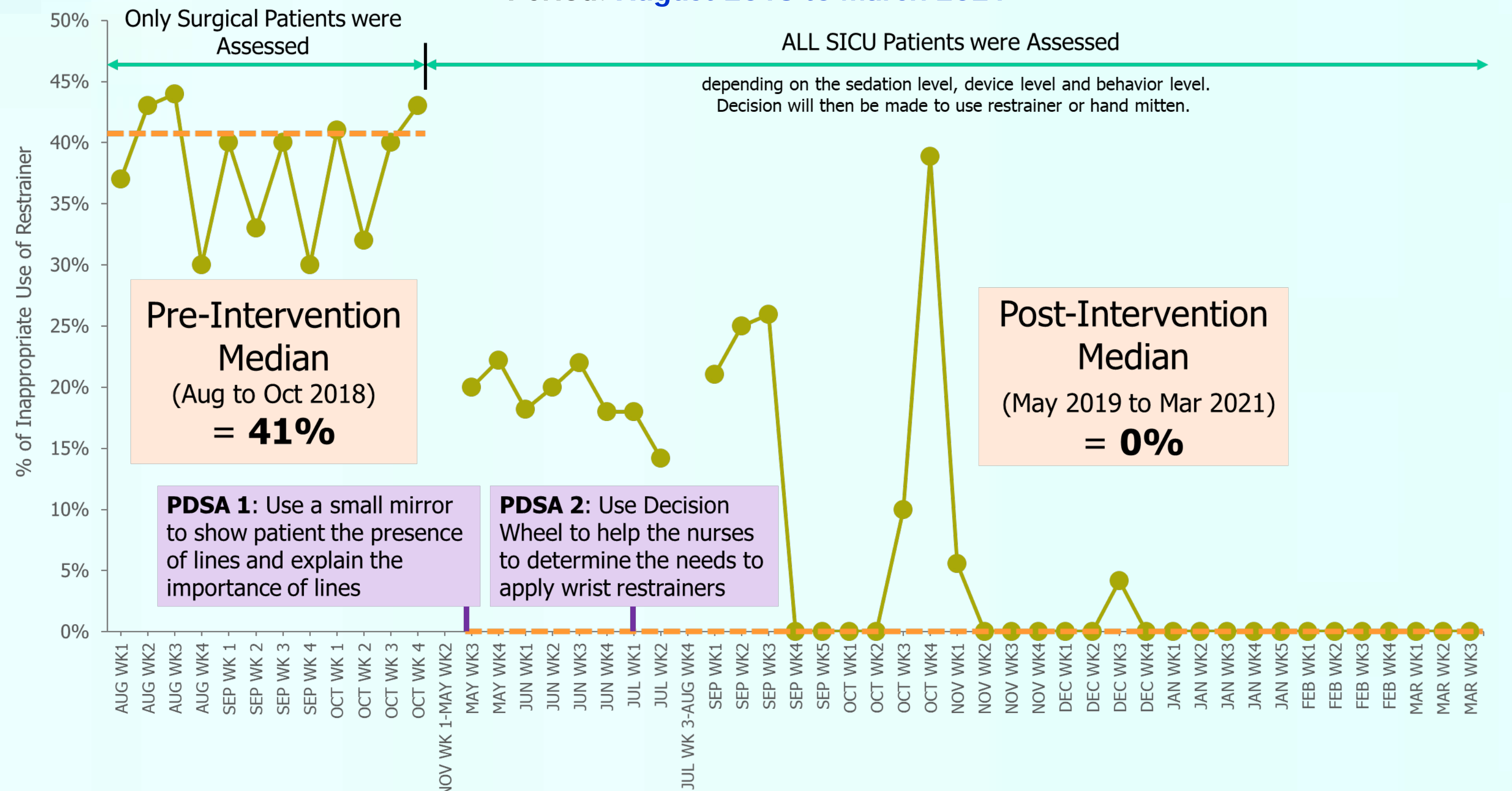


Implementation

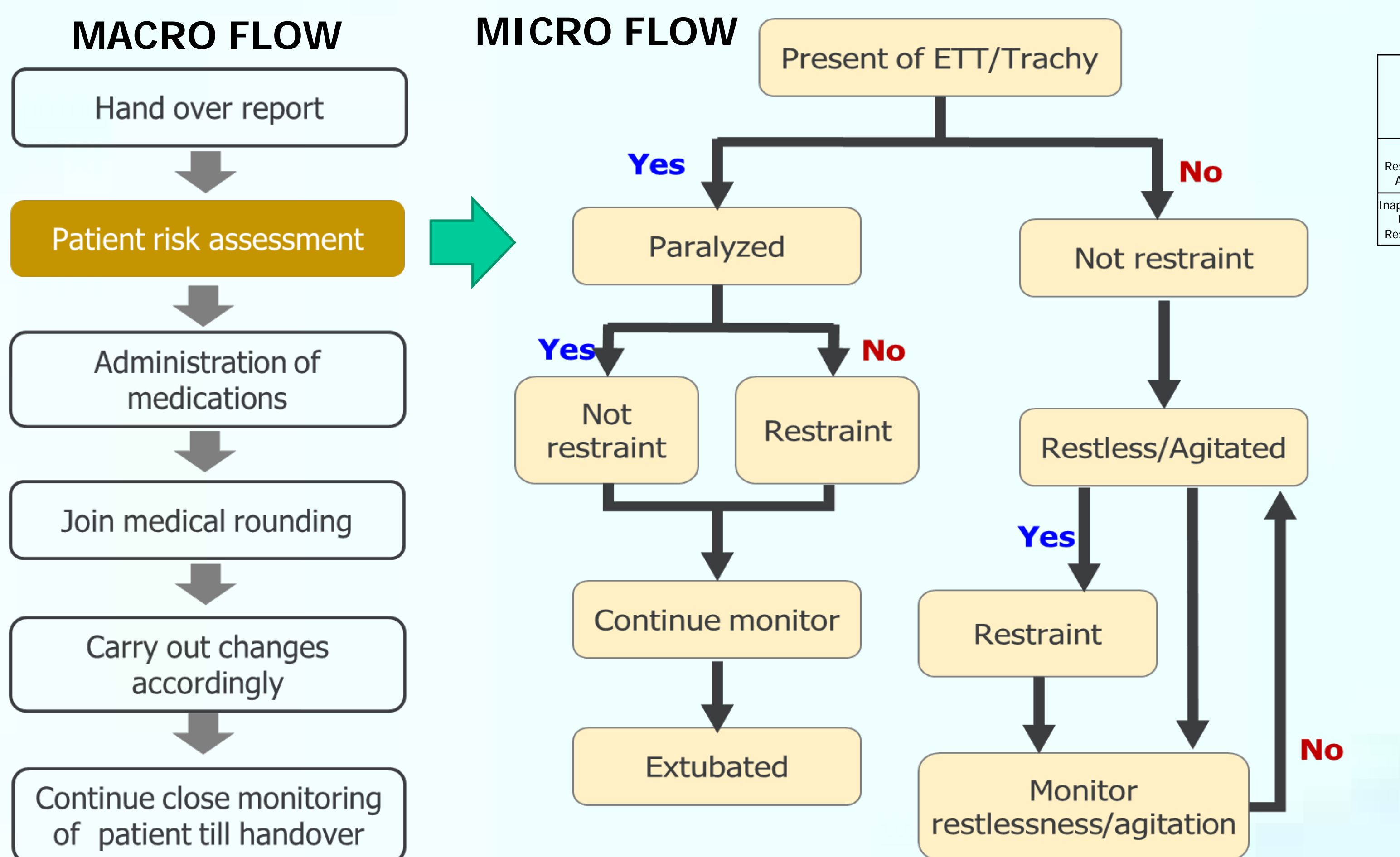
Root Cause	Intervention	Implementation Date
Cause B: Inadequate information given to patient	PDSA 1: Use a small mirror to show patient the presence of lines and explain the importance of lines	20 May 2019
Cause A: Inadequate guideline on restraint	PDSA 2: Use Decision Wheel to help the nurses to determine the needs to apply wrist-restraints	1 July 2019

Results

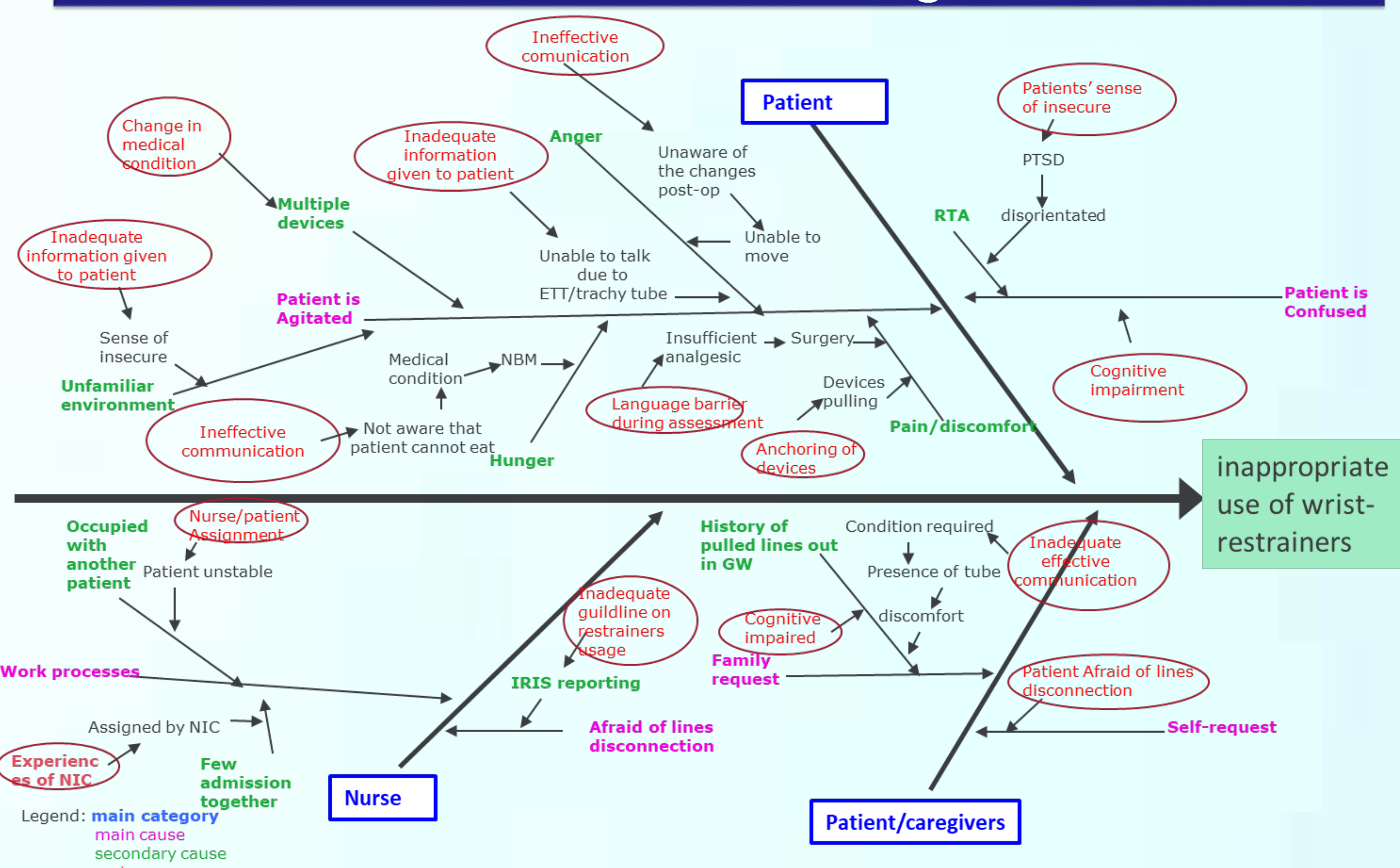
Percentage of Inappropriate Use of Wrist-Restraints for Intubated Patients in SICU
Period: August 2018 to March 2021



Flow Chart of Process



Cause and Effect Diagram



Cost Savings

	Pre-Intervention (Aug to Oct 2018)	Post-Intervention (Jan to Mar 2021)
Average No. of Restraints Applied (Per Week)	35	17
Median % of Inappropriate Use of Restraints	41%	0%
No. of Inappropriate Restraints Used	14	0
Restraint Cost + Nursing Manhour Cost	$(14 \times \$35) + (14 \times \$0.97 \times 6) = \$571.48$	\$0
Potential Cost Avoidance of inappropriate use of Restraints (Per Week)		$571.48 - 0 = \$571.48$
Potential Cost Avoidance of inappropriate use of Restraints (Per Month)		$571.48 \times 4 = \$2,041.48$
Potential Cost Avoidance of inappropriate use of Restraints (in 1 Year)		$441.48 \times 12 = \$23,601.48$

Note: Each pair of restrainter cost = \$35; Number of minutes required to apply restraints to patient by nurse = 6 mins; Weighted Ave Cost per min for Senior Staff Nurse = \$0.97

Lessons Learnt

1. Assessing the need for restraints, multiple approach will enhance nurses' decision making process.
2. Appropriate interventions are required to improve patient outcomes
3. ICU nurses must keep vital therapies intact while maintaining human dignity

Strategies to Sustain

1. To educate patients @ pre-operation phase (to tell in advance - show video that patients will have tube in their mouth etc.)
2. Involve relatives during their visitation period, to encourage them to interact with patient, like holding hands, off restraints if they are around.
3. Explore more alternatives instead of physical restraint, like simple activities to occupy patients' mind.
4. Nurses to change mindset